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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,938	02/03/2004	Clinton R. Vedders	075949.0115	1628

5073 7590 11/01/2006

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EXAMINER

LUKS, JEREMY AUSTIN

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/770,938	Applicant(s) VEDDERS, CLINTON R.	
	Examiner Jeremy Luks	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4, 7, 9, 10, 14, 15 and 40-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4, 7, 9-10, 14-15 and 40-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 15, 57 and 70 are objected to because of the following informalities: The Drawings and Specification contain no disclosure of the claimed subject matter of these claims. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-4, 9-10, 14-15 40-52 and 54-57 rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (5,154,254) in view of Airhart (4,967,870).

With respect to Claims 9, 10, 14, 40-49, and 54-56, Thompson teaches an accelerated weight drop for use as a seismic energy source (Figure 1, #10), comprising a striker (24) positionable over a surface, and a strike plate (12) positionable between said striker (24) and said surface wherein said striker (24) is configured to strike said strike plate (12); a driver (16), wherein said striker (24) is slidably coupled to said driver (16), and configured to drive said striker (24) toward said surface thus creating seismic waves within said surface. Thompson fails to teach a housing at least partially surrounding the striker, and an impact isolator coupled to the surface and operable to

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allow the housing to move relative to the surface upon an impact of the striker with the surface; wherein the impact isolator comprises a member having a slot positioned substantially in line with a line of impact of the striker, and wherein the surface comprises a pin operable to be slidably coupled within the slot; wherein the surface further comprises an anvil disposed between the strike plate and the striker and the pin is rigidly coupled to the anvil, and wherein slidably coupling the impact isolator to the surface comprises positioning the pin within the slot substantially in line with a line of impact of the striker; wherein the housing is coupled to a static load and is configured to transfer the static load to the strike plate; wherein the accelerated weight drop further comprises a hydraulic press coupled to the housing, the hydraulic press configured to create the static load; and wherein the accelerated weight drop further comprises a hydraulic lift coupled to the striker, the hydraulic lift configured to lift the striker to a cocked position. Airhart teaches a housing (Figure 1, #30) at least partially surrounding a striker (32), an impact isolator (44) coupled to the surface (42) (coupled via base plate #16) and operable to allow the housing (30) to move relative to a surface (42) upon an impact of the striker (32) with the surface (42); wherein the impact isolator (44, 200; Col. 6, Lines 54-59) comprises a member having a slot (see slot where member #202 passes through) positioned substantially in line with a line of impact of the striker (32) (See Figure 4, orientation of isolators 44 in line with striker 32), and wherein the surface comprises a pin (202) operable to be slidably coupled within the slot; wherein the surface further comprises an anvil (Figure 1, #40 can be an anvil) disposed between the strike plate (16) and the striker (32) and the pin is rigidly coupled (via # 204) to the strike plate (16), and wherein slidably coupling the impact isolator (44) to the surface (42)

comprises positioning the pin (202) within the slot substantially in line with a line of impact of the striker (See Figure 4); wherein the housing (30) is coupled to a static load and is configured to transfer the static load to the strike plate (16) (impact from "static load" is transferred from the housing through support frame #12 to the lift frame which is then transferred to the strike plate (16) via isolator #44"); wherein the accelerated weight drop further comprises a hydraulic press (22) coupled to the striker housing (30) (coupled via lift frame #14), the hydraulic press (22) configured to create the static load; and wherein the hydraulic lift (22) configured to lift the striker (32) to a cocked position (via support frame #12). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Thompson with the apparatus of Airhart to transfer as much of the impact load to the striker plate as possible. Airhart fails to teach wherein the pin is rigidly coupled to the anvil. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to couple the pin to the anvil portion of the strike plate, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

With respect to Claims 2 and 50, Thompson teaches wherein said driver comprises a compressed gas spring (Figure 1, #16) which includes a gas chamber (18) and a piston (22), wherein said piston (22) is configured to slide within said gas chamber (18) to compress a gas therein to create a pressure that drives said striker (24) toward said surface (Col 3, Lines 16-26).

With respect to Claims 3, 4, 51 and 52, Thompson teaches a charging port (Figure 1, # 36) coupled to said gas chamber (18), said charging port (36) configured to

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provide said gas within said gas chamber (18) (Col. 3, Lines 52-56); further, a push rod (Figure 2, #22 lower end) connects said piston (#22 upper end) to said striker (24). The Examiner considers the lower end of the piston, #22 to be a push rod (Col. 3, Lines 16-26).

With respect to Claims 15 and 57, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide multiple of the compressed gas springs are slidably coupled to the striker, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Further, Applicant acknowledges the previous objection of Claim 15 by the Examiner and claims to have canceled the claim in the Remarks (page 10), but has amended claim 15 with no significant changes to overcome said objection.

3. Claims 7 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (5,154,254) in view of Airhart (4,967,870) as applied to claims 40 and 45 above, and further in view of Airhart (4,991,685). Thompson and Airhart '870 are relied upon for the reasons and disclosures set forth above. Thompson and Airhart '870 fail to teach comprises a catch mechanism coupled to the housing and configured to hold the striker in a cocked position. Airhart '685 teaches comprises a catch mechanism (Figure 4, #52) coupled to a (16) housing and configured to hold a striker (30) in a cocked position. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Thompson as modified, with the apparatus of Airhart '685 to lock the striker in a cocked position during transport or prior to use.

4. Claims 58-65 and 67-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (5,154,254) in view of Airhart (4,967,870) and Kostrov (2003/0201101).

With respect to Claims 58-62 and 67-70, Thompson teaches an accelerated weight drop for use as a seismic energy source (Figure 1, #10), comprising a striker (24) positionable over a surface, and a strike plate (12) positionable between said striker (24) and said surface wherein said striker (24) is configured to strike said strike plate (12); a driver (16), wherein said striker (24) is slidably coupled to said driver (16), and configured to drive said striker (24) toward said surface thus creating seismic waves within said surface. Thompson fails to teach a housing at least partially surrounding the striker, and an impact isolator coupled to the surface and operable to allow the housing to move relative to the surface upon an impact of the striker with the surface; wherein the impact isolator comprises a member having a slot positioned substantially in line with a line of impact of the striker, and wherein the surface comprises a pin operable to be slidably coupled within the slot; wherein the surface further comprises an anvil disposed between the strike plate and the striker and the pin is rigidly coupled to the anvil, and wherein slidably coupling the impact isolator to the surface comprises positioning the pin within the slot substantially in line with a line of impact of the striker; wherein the housing is coupled to a static load and is configured to transfer the static load to the strike plate; wherein the accelerated weight drop further comprises a hydraulic press coupled to the housing, the hydraulic press configured to create the static load; and wherein the accelerated weight drop further comprises a hydraulic lift coupled to the striker, the hydraulic lift configured to lift the striker to a

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cocked position; and at least one geophone placed proximate said surface, said at least one geophone configured to collect seismic waves; and information from said seismic recorder connected to said at least one geophone, said seismic recorder configured to record said collected information. Airhart teaches a housing (Figure 1, #30) at least partially surrounding a striker (32), an impact isolator (44) coupled to the surface (42) (coupled via base plate #16) and operable to allow the housing (30) to move relative to a surface (42) upon an impact of the striker (32) with the surface (42); wherein the impact isolator (44, 200; Col. 6, Lines 54-59) comprises a member having a slot (see slot where member #202 passes through) positioned substantially in line with a line of impact of the striker (32) (See Figure 4, orientation of isolators 44 in line with striker 32), and wherein the surface comprises a pin (202) operable to be slidably coupled within the slot; wherein the surface further comprises an anvil (Figure 1, #40 can be an anvil) disposed between the strike plate (16) and the striker (32) and the pin is rigidly coupled (via # 204) to the strike plate (16), and wherein slidably coupling the impact isolator (44) to the surface (42) comprises positioning the pin (202) within the slot substantially in line with a line of impact of the striker (See Figure 4); wherein the housing (30) is coupled to a static load and is configured to transfer the static load to the strike plate (16) (impact from "static load" is transferred from the housing through support frame #12 to the lift frame which is then transferred to the strike plate (16) via isolator #44"); wherein the accelerated weight drop further comprises a hydraulic press (22) coupled to the striker housing (30) (coupled via lift frame #14), the hydraulic press (22) configured to create the static load; and wherein the hydraulic lift (22) configured to lift the striker (32) to a cocked position (via support frame #12). It would have been obvious to one of ordinary

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skill in the art at the time of the invention to combine the apparatus of Thompson with the apparatus of Airhart to transfer as much of the impact load to the striker plate as possible. Airhart fails to teach wherein the pin is rigidly coupled to the anvil. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to couple the pin to the anvil portion of the strike plate, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. Airhart further fails to teach at least one geophone placed proximate said surface, said at least one geophone configured to collect seismic waves; and information from said seismic recorder connected to said at least one geophone, said seismic recorder configured to record said collected information. Kostrov teaches at least one geophone (Figure 8, #215) placed proximate a surface, said at least one geophone (215) configured to collect seismic waves; and information from said seismic recorder connected to said at least one geophone, said seismic recorder configured to record said collected information (Page 8, [0111]). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Thompson as modified, with the apparatus of Kostrov to provide receiving and recording means for the seismic waves produced by the apparatus of Thompson.

With respect to Claim 63, Thompson teaches wherein said driver comprises a compressed gas spring (Figure 1, #16) which includes a gas chamber (18) and a piston (22), wherein said piston (22) is configured to slide within said gas chamber (18) to

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compress a gas therein to create a pressure that drives said striker (24) toward said surface (Col 3, Lines 16-26).

With respect to Claim 64 and 65, Thompson teaches a charging port (Figure 1, # 36) coupled to said gas chamber (18), said charging port (36) configured to provide said gas within said gas chamber (18) (Col. 3, Lines 52-56); further, a push rod (Figure 2, #22 lower end) connects said piston (#22 upper end) to said striker (24). The Examiner considers the lower end of the piston, #22 to be a push rod (Col. 3, Lines 16-26).

With respect to Claim 70, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide multiple of the compressed gas springs are slidably coupled to the striker, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Further, Applicant acknowledges the previous objection of Claim 15 by the Examiner and claims to have canceled the claim in the Remarks (page 10), but has amended claim 15 with no significant changes to overcome said objection.

5. Claim 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (5,154,254) in view of Airhart (4,967,870) and Kostrov (2003/0201101) as applied to claim 58 above, and further in view of Airhart (4,991,685). Thompson and Airhart '870 are relied upon for the reasons and disclosures set forth above. Thompson and Airhart '870 fail to teach comprises a catch mechanism coupled to the housing and configured to hold the striker in a cocked position. Airhart '685 teaches comprises a catch mechanism (Figure 4, #52) coupled to a (16) housing and configured to hold a striker (30) in a cocked position. It would have been obvious to one of ordinary skill in

the art at the time of the invention to combine the apparatus of Thompson as modified, with the apparatus of Airhart '685 to lock the striker in a cocked position during transport or prior to use.

Response to Arguments

6. Applicant's arguments with respect to claims 2-4, 7, 9-10, 14-15 and 40-70 have been considered but are moot in view of the new ground(s) of rejection. The Examiner affirms that the obvious combination of Thompson, Airhart '870, Kostrov and Airhart '685 teach all of the limitations claimed by Applicant.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is (571) 272-

2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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